



Substitute for form 1449A-B/PTO  INFORMATION DISCLOSURE STATEMENT BY APPLICANT  (use as many sheets as necessary)		Complete if Known			
		Application Number	09/494,282		
		Filing Date	January 18, 2000		
		First Named Inventor	Sergey A. Selifonov		
		Group Art Unit	1631		
		Examiner Name	Zhou S.		
		Attorney Docket Number	02-028930US		

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	U.S. Patent Document Number	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
Q	AA	6,188,965	B1 Mayo et al. 702/19	02-13-2001	TECH CENTER 1000/2000 RECEIVED 06-11-2001
Q	AB	6,269,312	B1 Mayo et al. 702/19	07-31-2001	

FOREIGN PATENT DOCUMENTS					
Examiner Initials	Cite No.	Foreign Patent Document Office	Number	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appeal
Q	AC	WO	00/23564	A2 Xencor, Inc	04-27-2000 2000/2000 RECEIVED 06-11-2001

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			
Q	AD	CHAMBERLAIN ET AL. (1990) "Multiplex PCR for the Diagnosis of Duchenne Muscular Dystrophy." <i>PCR Protocols</i> 272-281.			
Q	AE	HAYASHI ET AL. (1994) "Simultaneous Mutagenesis of Antibody CDR Regions by Overlap Extension and PCR." <i>BioTechniques</i> 17(2):310-315.			
Q	AF	JIRHOLT ET AL. (1998) "Exploiting sequence space: shuffling in vivo formed complementarity determining regions into a master framework." <i>Gene</i> 215:471-476.			
Q	AG	KOBAYASHI ET AL (1997) "Analysis of Assembly of Synthetic Antibody Fragments: Expression of Functional scFv with Predefined Specificity." <i>BioTechniques</i> 23(3):500-503.			
Q	AH	PRODROMOU ET AL (1992) "Recursive PCR: a novel technique for total gene synthesis." <i>Protein Engineering</i> 5(8):827-829.			
Q	AI	SODERLIND ET AL.(1999) "Complementarity-determining region (CDR) implantation: a theme or recombination." <i>Immunotechnology</i> 4:279-285.			
Q	AJ	SODERLIND ET AL.( 2000) "Recombinant germline-derived CDR sequences for creating diverse single-framework antibody libraries." <i>Nature Biotechnology</i> 18:852-856.			
Q	AK	SODERLIND ET AL. (1995) "Domain libraries: Synthetic diversity for de novo design of antibody V-regions." <i>Gene</i> 160:269-272.			

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**O I P**  
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JUN 08 2001  
Use as many sheets as necessary)

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RZ	AA	4,959,312		Sirokin	09-25-1990	
AB	AB	4,994,379		Chang	02-19-1991	
AC	AC	5,043,272		Hartly et al.	08-27-1991	
AD	AD	5,264,563		Huse	11-23-1993	
AE	AE	5,447,839		Manos et al.	09-05-1995	
AF	AF	5,506,793		Stemmer	04-09-1996	
AG	AG	5,521,077		Kholsa et al.	05-28-1996	
AH	AH	5,565,350		Kmiec	10-15-1996	
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AJ	AJ	5,612,205		Kay et al.	03-18-1997	
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AN	AN	5,824,469		Short	10-20-1998	
AO	AO	5,866,363		Pieczenik	02-02-1999	
AP	AP	5,869,644		Shortle et al.	02-09-1999	
AQ	AQ	5,912,119		Radman et al.	06-15-1999	
AR	AR	6,001,574		Short et al.	12-14-1999	
AS	AS	6,004,788		Short	12-21-1999	
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AU	AU	6,054,267		Short	04-25-2000	
AV	AV	6,096,548		Stemmer	08-01-2000	
AW	AW	6,117,679		Stemmer	09-12-2000	
AX	AX	6,132,970		Stemmer	10-17-2000	
AY	AY	6,153,410		Arnold et al.	11-28-2000	
AZ	AZ	6,159,690		Borrebaeck et al.	12-12-2000	
BA	BA	5,675,253		Smith et al.	10-07-1997	

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BV	COLE-STRAUSS ET AL. "Correction of the Mutation Responsible for Sickle Cell Anemia by an RNA-DNA Oligonucleotide." <i>Science</i> 1386-1389 (1996)
BW	DALE ET AL. "Oligonucleotide-directed Random Mutagenesis Using the Phosphorothioate Method." <i>Methods Mol. Biol.</i> 57:369-374 (1996)
BX	DELAGRAVE "Searching Sequence Space to Engineer Proteins: Exponential Ensemble Mutagenesis." <i>Biotechnology (N Y)</i> . 1993 Dec;11(13):1548-52.
BY	DELAGRAVE "Recursive ensemble mutagenesis." <i>Protein Eng.</i> 1993 Apr;6(3):327-31.
BZ	DELAGRAVE "Context dependence of phenotype prediction and diversity in combinatorial mutagenesis." <i>Protein Eng.</i> 1995 Mar;8(3):237-42.
CA	Egea Biosciences, Inc. "Pathway to the Proteome"
CB	FODOR ET AL. "Light-Directed, Spatially Addressable Parallel Chemical Synthesis." <i>Science</i> 251:767-777 (1991)
CC	FODOR "Genome Analysis: Genome Technology." <i>FASEB Journal</i> 11:121 (1997)
CD	FODOR "Massively Parallel Genomics." <i>Science</i> 227:393-395 (1997)
CE	GOLDMAN "An Algrithmically Optimized Combinatorial Library Screened by Digital Imaging Spectroscopy." <i>Biotechnology (N Y)</i> . 1992 Dec;10(12):1557-61.
CF	HILL ET AL. "The structure of granulocyte-colony-stimulating factor and its relationship to other growth factors." <i>PNAS</i> 90:5167 (1993)
CG	KACZOROWSKI ET AL. "Co-operatively of hexamer ligation." <i>Gene</i> 179(1):189-193 (1996)
CH	KARLIN ET AL. "Applications and statistics for multiple high-scoring segments in molecular sequences." <i>PNAS USA</i> 90:5873-5787 (1993)
CI	KAYUSHIN ET AL. "A convenient approach to the synthesis of trinucleotide phosphoroamidites-synthons for the generation of oligonucleotide/peptide libraries." <i>Nucleic Acids Res.</i> 24:3748-3755 (1996)
CJ	KREN ET AL. "Targeted Nucleotide Exchange in the Alkaline Phosphates Gene of HuH-7 Cells Mediated by a Chimeric RNA/DNA Oligonucleotide." <i>Hepatology</i> 25(6):1462-1468 (1997)
CK	KREN ET AL. "In Vivo site-directed mutagenesis of the factor IX gene by chimeric RNA/DNA oligonucleotides." <i>Nature Medicine</i> 4(3):285-290 (1998)
CL	KUNKEL "The Efficiency of Oligonucleotide-Directed Mutagenesis." <i>Nucleic Acids &amp; Mol. Biol.</i> (1997)
CM	LING ET AL. "Approaches to DNA Mutagenesis: An Overview." <i>Anal Biochem.</i> 254(2):157-178 (1997)
CN	MEHLING ET AL. "Nucleotide sequences of streptomycete 16S ribosomal DNA: towards a specific identification system for streptomycetes using PCR." <i>Microbiology</i> 141:2139-2147 (1995)
CO	MINTZ ET AL. "EHD1-An EH-Domain-Containing Protein with a Specific Expression Pattern." <i>Genomics</i> 59(1):66-76 (1999)
CP	MUERHOFF ET AL. "Identification of conserved nucleotide sequences within the GB virus c 5'-untranslated region: Design of PCR primers for detection of viral RNA J. Virological Methods

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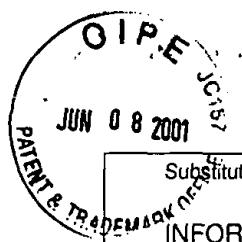
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<i>C</i>	CQ	NAKAMAYE ET AL. "Inhibition of restriction endonuclease Nci I Cleavage by phosphorothioate groups and its applications to oligonucleotide-directed mutagenesis." <i>Nucleic Acids Res.</i> 14:9679-9698 (1986)	
<i>R</i>	CR	NEEDLEMAN ET AL. "A General Method Applicable to the Search for Similarities in the Amino Acid Sequence of Two Proteins." <i>J. Mol. Biol.</i> 48:443 (1970)	
<i>A</i>	CS	PATHY "Modular exchange principles in proteins." <i>Curr Opinion in Structural Biology</i> 1:351-361 (1991)	
<i>A</i>	CT	PATHY "Introns and exons." <i>Curr. Opinion in Structural Biology</i> 4:383-392 (1994)	
<i>A</i>	CU	PEARSON ET AL. "Improved tools for biological sequence comparison." <i>PNAS</i> 85:2444 (1988)	
<i>A</i>	CV	PORTER ET AL. "Direct PCR Sequencing with boronated Nucleotides." <i>Nucleic Acids Res.</i> 25(8):1611-1617 (1997)	
<i>A</i>	CW	ROBLES "Hydropathy and Molar Volume Constraints on Combinatorial Mutants of the Photosynthetic Reaction Center." <i>J Mol Biol.</i> 1993 Jul 5;232(1):242-52.	
<i>A</i>	CX	SAYERS ET AL. "5'-3' Exonucleases in phosphorothioate-based oligonucleotide-directed mutagenesis." <i>Nucleic Acids Res.</i> 16:791-802(1988)	
<i>A</i>	CY	SAYERS ET AL. "Strand specific cleavage of phosphorothioate-containing DNA by reaction with restriction endonucleases in the presence of ethidium bromide." <i>Nucleic Acids Res.</i> 16:803-814 (1988)	
<i>A</i>	CZ	SMITH "In Vitro Mutagenesis." <i>Ann. Rev. Genet.</i> 19:423-462 (1985)	
<i>A</i>	DA	SMITH ET AL. "Comparison of Biosequences." <i>Adv. Appl. Math</i> 2:482 (1981)	
<i>A</i>	DB	STRAUSS "The Site-Specific Correction of Genetic Defects." <i>Nature Medicine</i> 4:274-275 (1998)	
<i>A</i>	DC	TAYLOR ET AL. "The use of phosphorothioate-modified DNA in restriction enzyme reactions to prepare nicked DNA." <i>Nucleic Acids Res.</i> 13:8749-8764 (1985)	
<i>A</i>	DD	TAYLOR ET AL. "The rapid generation of oligonucleotide-directed mutations at high frequency using phosphorothioate-modified DNA." <i>Nucleic Acids Res.</i> 13:8765-8787 (1985)	
<i>A</i>	DE	VIRNEKAS ET AL. "Trinucleotide phosphoramidites: ideal reagents for the synthesis of mixed oligonucleotides for random mutagenesis." <i>Nucleic Acids Res.</i> 22:5600-5607 (1994)	
<i>A</i>	DF	VON DER OSTEN ET AL. "Protein engineering of subtilisins to improve stability in detergent formulations." <i>J. Biotechnol.</i> 28:55-68 (1993)	
<i>A</i>	DG	WELLS "Importance of hydrogen-bond formation in stabilizing the transition state of subtilisin." <i>Trans. R. Soc. Lond.</i> A317:415-423 (1986)	
<i>A</i>	DH	WHIPPLE ET AL. "Application of Genetic Algorithms to Combinatorial Synthesis: A Computational Approach to Lead Identification and Lead Optimization." <i>J. AM. Chem Soc.</i> 118:1669-1676 (1996)	
<i>A</i>	DI	XIANG ET AL. "Targeted gene conversion in a mammalian CD34+-enriched cell population using a chimeric RNA/DNA oligonucleotide." <i>J. Mol. Med.</i> 75:829-835 (1997)	
<i>A</i>	DJ	YOON ET AL. "Targeted gene correction of episomal DNA in mammalian cells mediated by a chimeric RNA-DNA oligonucleotide." <i>PNAS</i> 93:2071-2076 (1996)	
<i>A</i>	DK	YOKOMORI ET AL. "A Similarity measure for DNA sequence analysis based on locality." <i>Genome Inf. Ser.</i> 4:283-292 (1993)	

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<input checked="" type="checkbox"/>	DL	YOUNG ET AL. "Characterization of the Receptor binding determinants of granulocyte colony stimulating factor." <i>Protein Science</i> 6:1228-1236 (1997)	
<input checked="" type="checkbox"/>	DM	YOUVAN "Imaging Sequence Space." <i>Nature</i> . 1994 May 5;369(6475):79-80.	
<input checked="" type="checkbox"/>	DN	ZOLLER "New recombinant DNA methodology for protein engineering." <i>Curr. Opinion in Biotechnology</i> 3:348-354 (1992)	

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<i>R</i>	BB	5,650,722		Smith et al.	07-22-1997	
<i>R</i>	BC	5,519,319		Smith et al.	05-21-1996	
<i>R</i>	BD	5,408,181		Dechene et al.	04-18-1995	
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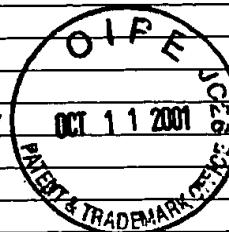
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		Office	Number	Kind Code (if known)				
<i>A</i>	BF	WO	00/00632		Phylos, Inc.	01-06-2000		
<i>A</i>	BG	WO	00/37684		KIRS & FELDER	06-29-2000		
<i>A</i>	BH	WO	00/53744		Diversa Corporation	09-14-2000		
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<i>A</i>	BK	WO	97/33957		Amway Corporation	09-18-1997		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS								
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<i>A</i>	BL	ALEXEEV ET AL. "Stable and Inheritable changes in genotype and phenotype of albino melanocytes induced by an RNA-DNA oligonucleotide." <i>Nature Biotechnology</i> 13:43-1346 (1998)						
<i>A</i>	BM	ALBERTS ET AL. "Recombinant DNA Technology." <i>New York Publishing, Inc.</i> 291-312 (1994)						
<i>A</i>	BN	ARKIN "Optimizing Nucleotide Mixtures to Encode Specific Subsets of Smino Acids for Semi-Random Mutagenesis." <i>Biotechnology (N Y)</i> . 1992 Mar;10(3):297-300.						
<i>A</i>	BO	ARKIN "An algorithm for protein engineering: Simulations of recursive ensemble mutagenesis." <i>Proc Natl Acad Sci U S A</i> . 1992 Aug 15;89(16):7811-5.						
<i>A</i>	BP	BARLETT "Long-lasting gene repair." <i>Nature Biotechnology</i> 16:1312 (1998)						
<i>A</i>	BQ	BOTSTEIN ET AL. "Strategies and Applications of in Vitro Mutagenesis." <i>Science</i> 229:1193-1201 (1985)						
<i>A</i>	BR	CARTER "Site-directed mutagenesis." <i>Biochem J</i> . 237:1-7 (1986)						
<i>A</i>	BS	CARTER "Improved Oligonucleotide-Directed Mutagenesis Using M13 Vectors." <i>Methods in Enzymol</i> 154:382-403 (1987)						
<i>A</i>	BT	CARTER "Improved oligonucleotide site-directed mutagenesis using M13 vectors." <i>Nucleic Acids Res</i> . 13:4431-4443 (1985)						
<i>A</i>	BU	CHEE ET AL. "Accessing Genetic Information with High-Density DNA Arrays." <i>Science</i> 274:610-614 (1996)						

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## FOREIGN PATENT DOCUMENTS

#### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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